

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) Process for the localized distribution of drops of a liquid of interest on an active surface of a substrate, the process comprising the following steps :
introduction of the liquid of interest into a box via an introduction means, the box enclosing the active surface, and
extraction of the liquid of interest from the box via an extraction means,
the active surface and also other surfaces inside the box being substantially non-wetting with respect to the liquid of interest with the exception of several localized uptake areas, formed in a given manner on the active surface, which are each suitable for taking up a drop of the liquid of interest,
the means for introducing and for extracting the liquid of interest in the box being arranged such that when the liquid of interest is introduced into the box, the liquid of interest covers the uptake areas, and when the liquid of interest is extracted from the box, a drop of the liquid of interest remains captive in a distributed and localized manner on each uptake area,
each uptake area being arranged with at least one working area formed on the active surface such that this working area is in contact with the captive drop of liquid of interest,
the at least one working area being an area that is non-wetting with respect to the liquid of interest,
at least one uptake area having an open or closed ring shape that encircles the at least one working area arranged therewith.
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)

5. (Currently Amended) Process according to Claim [[4]] 1, in which the area for uptake of the drop of the liquid of interest encircles several working areas.

6. (Previously Presented) Process according to Claim 1, in which the working area is an area for detection of a chemical species that may be present in the liquid of interest.

7. (Original) Process according to Claim 6, in which the working area is an area functionalized with a biological probe.

8. (Original) Process according to Claim 7, in which the probe is chosen from the group consisting of an enzyme, an enzyme substrate, an oligonucleotide, an oligonucleoside, a protein, a membrane receptor of a eukaryotic or prokaryotic cell, an antibody, an antigen, a hormone, a metabolite of a living organism, a toxin of a living organism, a polynucleotide, a polynucleoside or a complementary DNA.

9. (Original) Process according to Claim 6, in which the working area is an area functionalized with a chemical molecule.

10. (Currently Amended) Process according to Claim [[2]] 1, in which the working area is an area of electrical and/or chemical interaction with the captive drop.

11. (Original) Process according to Claim 10, in which the working area is an electrochemical microcell.

12. (Currently Amended) Process according to Claim [[2]] 1, in which the working area comprises a sensor chosen from the group consisting of optical, electrical, magnetic, electrostatic, mechanical, thermal and chemical sensors.

13. (Currently Amended) Process according to Claim [[2]] 1, in which the working area comprises an actuator chosen from the group consisting of optical, electrical, magnetic, electrostatic, mechanical, thermal and chemical actuators.

14. (Previously Presented) Process according to Claim 1, in which at least one of the areas for uptake of a drop of the liquid of interest is an electrical or physical uptake area.

15. (Original) Process according to Claim 14, in which the uptake area takes up the drop of the liquid of interest via capillary forces.

16. (Original) Process according to Claim 14, in which the uptake area locally takes up the drop of liquid of interest by wetting.

17. (Original) Process according to Claim 16, in which the uptake area locally takes up the drop of liquid of interest by means of a wettability of the uptake area for the liquid of interest that is greater than that of the active surface.

18. (Original) Process according to Claim 16, in which the uptake area locally takes up the drop of liquid of interest by electrowetting.

19. (Original) Process according to Claim 14, in which the uptake area takes up the drop of liquid of interest via interactions of hydrophilic/hydrophobic type with the liquid of interest.

20. (Previously Presented) Process according to Claim 1, in which at least one of the uptake areas is in relief or protrudes relative to the active surface on which it is formed.

21. (Previously Presented) Process according to Claim 1, in which the localized uptake areas, distributed in a given manner on the active surface, form a matrix.

22. (Previously Presented) Process according to Claim 1, in which, the means for extracting the liquid of interest being means for removing it from the box by suction, the extraction step consists in removing the liquid of interest from the box by suction.

23. (Previously Presented) Process according to Claim 1, in which, the means for extracting the liquid of interest being means for injecting a gaseous fluid into the box, the

extraction step consists in injecting a gaseous fluid into the box so as to expel the liquid of interest from the box.

24. (Original) Process according to Claim 23, in which the gaseous fluid injected is saturated with vapour of the liquid of interest.

25. (Previously Presented) Use of a process according to Claim 1 in a lab-on-chip or in a microsystem for chemistry or biology.

26. (Previously Presented) Use of a process according to Claim 1 in a biochip chosen from the group consisting of DNA chips, RNA chips, protein chips, antibody chips, antigen chips and cell chips.

27. (Previously Presented) Process for detecting at least one molecule that may be present in a liquid of interest, the process comprising the following steps :

localized distribution of drops of liquid of interest on an active surface in a box according to the process of Claim 1, and

electrochemical detection in the drops of the, at least one, molecule that may be present in the liquid of interest.

28. (Previously Presented) Process for the optical detection of at least one molecule that may be present in a liquid of interest, the process comprising the following steps :

localized distribution of drops of a liquid of interest on an active surface in a box according to the process of Claim 1, and

optical detection in the drops of the, at least one, molecule that may be present in the liquid of interest.

29. (Previously Presented) Process according to Claim 27, in which detections of various molecules that may be present in the liquid of interest are performed in parallel in different drops of liquid of interest captive on the active surface in the box.

30. (Previously Presented) Process for the electropolymerization of molecules present in a liquid of interest, the process comprising the following steps :

localized distribution of drops of liquid of interest on an active surface in a box according to the process of Claim 1, and

electropolymerization in the box, in the drops of the liquid of interest, of the molecules to be polymerized.